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158, PHASE ONE PALM MEADOWS, RAMAGUNDANAHALLI AIRPORT WHITEFIELD ROAD BANGALORE, 560043 INDIA			. DWIVEDI, MAHESH H	
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Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

		Application No.	Applicant(s)			
Office Action Summary		10/708,940	BANDE ET AL.			
		Examiner	Art Unit			
		Mahesh H. Dwivedi	2168			
The MAILING DATE of this communication appears on the cover sheet with the correspondence address Period for Reply						
A SHO WHIC - Exter after: - If NO - Failur Any r	ORTENED STATUTORY PERIOD FOR REF HEVER IS LONGER, FROM THE MAILING isions of time may be available under the provisions of 37 CFR SIX (6) MONTHS from the mailing date of this communication. period for reply is specified above, the maximum statutory perior er to reply within the set or extended period for reply will, by sta- eply received by the Office later than three months after the ma- ted patent term adjustment. See 37 CFR 1.704(b).	DATE OF THIS COMMUNICATION 1.136(a). In no event, however, may a reply be to did will apply and will expire SIX (6) MONTHS from to the cause the application to become ABANDON	DN. timely filed m the mailing date of this communication. IED (35 U.S.C. § 133).			
Status						
2a) <u></u> □	Responsive to communication(s) filed on <u>27</u> This action is FINAL . 2b) \(\sum \) T Since this application is in condition for allow closed in accordance with the practice under	his action is non-final. wance except for formal matters, p				
Dienositi	on of Claims					
4)⊠ 5)□ 6)⊠ 7)□ 8)□ Applicati 9)□ 10)⊠	Claim(s) 1,4-11,14-21 and 24-35 is/are penda) Of the above claim(s) is/are without claim(s) is/are allowed. Claim(s) 1,4-11,14-21 and 24-35 is/are rejected to. Claim(s) is/are objected to. Claim(s) are subject to restriction and on Papers The specification is objected to by the Exam The drawing(s) filed on 01 April 2004 is/are: Applicant may not request that any objection to the Replacement drawing sheet(s) including the control of the oath or declaration is objected to by the	drawn from consideration. cted. d/or election requirement. inner. a)⊠ accepted or b)□ objected to the drawing(s) be held in abeyance. So rection is required if the drawing(s) is o	ee 37 CFR 1.85(a). objected to. See 37 CFR 1.121(d).			
Priority under 35 U.S.C. § 119 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some colon None of: 1. Certified copies of the priority documents have been received. 2. Certified copies of the priority documents have been received in Application No. 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received.						
1) Notice of References Cited (PTO-892) 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 4) Interview Summary (PTO-413) Paper No(s)/Mail Date 5) Notice of Informal Patent Application 6) Other:						

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/02/2006 has been entered.

Remarks

2. Receipt of Applicant's Amendment filed on 02/27/2007 is acknowledged. The amendment includes amending claims 1, 11, and 21, the cancellation of claims 2-3, 12-13, and 22-23, and the addition of claims 30-35.

Claim Rejections - 35 USC § 112

- 3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

 The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
- 4. Claims 31, 33, and 35 recite the limitation "said first second end system" in pages 7-8. There is insufficient antecedent basis for this limitation in the claim.
- 5. Claim 34 recites the limitation "The computer readable medium of claim 21" in page 8. There is insufficient antecedent basis for this limitation in the claim, as independent claim 21 is directed towards an apparatus.

Claim 35 is rejected for incorporating the deficiencies of claim 34.

6. Claims 31, 33, and 35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the examiner points to the limitation "if the processing load on said first second end system is not more" as being indefinite. The examiner wishes to state that it is unclear as to which end system's (the first or the second) processing load is being compared with a first threshold. For the purposes of this examination, the examiner regards the first end system's processor load as being compared to the first threshold.

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Claim Objections

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7. Claims 31, 33, and 35 are objected to because of the following informalities: The phrase "and determines to **said send said** data in said compressed" should be changed to "and determines to **send said** data in said compressed". Appropriate correction is required.

Claim Rejections - 35 USC § 103

- 8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
- 10. Claims 1, 4-6, 9-11, 14-16, 19-21, 24-26, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ernst et al.** (U.S. PGPUB 2004/0103215) in view of **Cranstone et al.** (European Patent WO 02/097584 published on 12/05/2002), and in view of **Tracton et al.** (U.S. Patent 6,832241).
- 11. Regarding claims 1 and 11, **Ernst** teaches a method and computer readable medium comprising:
- A) determining <u>in said first end system</u> whether to send said data in a compressed format (Paragraph 21, Figure 4);

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B) if it is determined to send said data in said compressed format, compressing said data to generate compressed data using a compression approach and sending said compressed data to said second end system on said network (Paragraph 21, Figure 4); and

C) otherwise, sending said data in an uncompressed format to said second end system on said network (Paragraph 21, Figure 4);

The examiner notes that Ernst teaches "determining in said first end system whether to send said data in a compressed format" as "When routine 315 receives web server 310's response to browser 325's request for data (block 405), it determines whether the data contained therein is eligible for compression (decision block 410)" (Paragraph 21). The examiner further notes that Ernst teaches "if it is determined to send said data in said compressed format, compressing said data to generate compressed data using a compression approach and sending said compressed data to said second end system on said network" as "After compressing the data, routine 315 may update a metadata store it uses to track what data objects its has compressed (block 450) and then transmit the compressed data back to browser 325 (block 455)" (Paragraph 21). The examiner further notes that Ernst teaches "otherwise, sending said data in an uncompressed format to said second end system on said network" as "If the data is not eligible for compression (the "NO" prong of decision block 410), the data received from the web server 310 during the acts of block 405 is passed or relayed to browser 325 without further processing (block 415)" (Paragraph 21). The examiner further notes that Ernst teaches "wherein said determining checks a processing load on each of said first end system and said second end system" as "routine 315 in accordance with one embodiment of the invention begins by determining certain client 320/browser 325 information (block 400). For example, routine 315 may determine the approximate data transfer rate between browser 325 and web server 210 during set-up operations. In addition, routine 315 may ascertain if browser 325 supports decompression utilities" (Paragraph 21) and "a further check is made to determine if the central processor unit executing routine 315 and/or designated to compress data for routine 315 is below a specified utilization (decision

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block 430). The check of block 430 may be performed to ensure that server 305 (or a functional unit associated with server 305) is not tasked to perform a computationally intensive job (the act of compressing data) if it is already heavily utilized for other tasks" (Paragraph 21). The examiner further notes that Ernst teaches "determines not to send said data in said compressed format if the processing load on either end system is determined to be more than a first threshold" as "a utilization threshold may be set at specified percentage of the processor's total capacity. In some embodiments, this threshold may be set at the user's discretion anywhere from 0% to 100%. For example 85%. If routine 315's processor's utilization is at or above the specified threshold (the "YES" prong of decision block 430), data received from web server 310 during the acts of block 405 is passed or relayed to browser 325 with further processing (block 415)" (Paragraph 21).

Ernst does not explicitly teach:

- D) wherein said determining checks a processing load on said second end system; and
- E) determines not to send data in said compressed format if the processing load on said second end system.

Cranstone, however, teaches "wherein said determining checks a processing load on said second end system" as "Computing resource characteristic detect module 34 is configured to obtain information useful to assess generally, the capability of a client device 16 to decode and decompress a multimedia current stream which, as described above, is commonly compressed. As used herein, computing resource characteristics may include the type and clock speed of a central processing unit (CPU), including any other characterizing computing ability" (Paragraph 31) and "determines not to send said data in said compressed format if the processing load on said second end system" as "the video server 12 may determine that no compression should be used in order to provide the best experience to the user of that particular client device 16 in terms of framers per second" (Paragraph 38), "Sufficient computing resources may be unavailable to perform the decoding, decompression and the color-to-grey scale and scaling conversions in a suitably high frame rate. In such case, the server software may perform the color-to-grey scale and size scaling

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transformations on the server side and send that in either compressed or uncompressed format to the client device 16" (Paragraph 39), and "Video format module 42 selects an uncompressed, 16-level grey-scale video format with a scaled size of approximately 160 x 160 pixels for communication to this client 16" (Paragraph 45).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Cranstone's** would have allowed **Ernst's** to provide a method for allowing servers to not presume significant resources in end-user devices for data transfer and compression, as noted by **Cranstone** (Paragraph 9).

Ernst and **Cranstone**, do not explicitly teach:

E) the processing load on <u>said second</u> end system is determined to be more than a first threshold.

Tracton, however, teaches "the processing load on <u>said second</u> end system is determined to be more than a first threshold" as "Next, the script inspects the clock speed of the client device 102. The server is attempting to determine whether the client has the raw horsepower to process high-bandwidth content" (Column 6, lines 57-60) and "If 228 of the processor is neither a Pentium Pro, Pentium II, or Pentium, or if 230 the clock speed was less than 300 MHz, or if 232 the client's network application 112 is not a supported web browser" (Column 7, lines 22-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Tracton's** would have allowed **Ernst's** and **Cranstone's** to provide a method for a server to accurately determine the client capabilities (e.g., processor speed, memory configuration, etc.) in order to tailor output of the server to meet those client capabilities, as noted by **Tracton** (Column 3, lines 7-12).

Regarding claims 4 and 14, **Ernst** further teaches a method and computer readable medium comprising:

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A) wherein said determining checks a type of said data (Paragraphs 21 and 23, Figure 4); and

B) determines not to send said data in said compressed format if said type does not lend to substantial data compression (Paragraphs 21 and 23, Figure 4).

The examiner notes that **Ernst** teaches "wherein said determining checks a type of said data" as "By way of example, data less than a specified size, or data already in a compressed format, or of a specified file type...may be designated "not eligible". If the data is not eligible for compression (the "NO" prong of decision block 410), the data received from the web server 310 during the acts of block 405 is passed or relayed to browser 325 without further processing (block 415)" (Paragraph 21). The examiner further notes that **Ernst** teaches "determines not to send said data in said compressed format if said type does not lend to substantial data compression" as "By way of example, data less than a specified size, or data already in a compressed format, or of a specified file type...may be designated "not eligible". If the data is not eligible for compression (the "NO" prong of decision block 410), the data received from the web server 310 during the acts of block 405 is passed or relayed to browser 325 without further processing (block 415)" (Paragraph 21).

Regarding claims 5 and 15, **Ernst** further teaches a method and computer readable medium comprising:

- A) wherein said determining examines a size of said data (Paragraph 21, Figure 4); and
- B) determines not to send said data in said compressed format if said size is small (Paragraph 21, Figure 4).

The examiner notes that **Ernst** teaches "**wherein said determining examines a size of said data**" as "By way of example, data less than a specified size, or data already in a compressed format, or of a specified file type...may be designated "not eligible". If the data is not eligible for compression (the "NO" prong of decision block 410), the data received from the web server 310 during the acts of block 405 is passed or relayed to browser 325 without further processing (block 415)" (Paragraph 21). The

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examiner further notes that Ernst teaches "determines not to send said data in said compressed format if said size is small" as "By way of example, data less than a specified size, or data already in a compressed format, or of a specified file type...may be designated "not eligible". If the data is not eligible for compression (the "NO" prong of decision block 410), the data received from the web server 310 during the acts of block 405 is passed or relayed to browser 325 without further processing (block 415)" (Paragraph 21).

Regarding claims 6 and 16, **Ernst** further teaches a method and computer readable medium comprising:

- A) wherein said determining further checks a speed of data transfer on said network (Paragraph 21, Figure 4); and
- B) determines not to use said compressed format if said speed is high (Paragraph 21, Figure 4).

The examiner notes that Ernst teaches "wherein said determining further checks a speed of data transfer on said network" as "based on the determined transmission rate between web server 310 and browser 325 (in accordance with the acts of block 400) and the amount of time it takes to compress the data object, routine 315 can determine if the time it takes to compress the data object provides an acceptable speed-up in transmission (block 440)" (Paragraph 21). The examiner further notes that Ernst teaches "determines not to use said compressed format if said speed is high" as "In one embodiment, if the time saved in transmitting the compressed data does not save more time (at the determined transmission rate between web server 310 and browser 325) than it takes to compress the data (the "NO" prong in decision block 440), the data received from web server 310 during the acts of block 405 is passed or relayed to browser 325 without further processing (block 415)" (Paragraph 21).

Regarding claims 9 and 19, **Ernst** further teaches a method and computer readable medium comprising:

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A) wherein said first end system comprises one of a database server and a database client (Paragraph 20, Figure 3); and

B) said second end system comprises the other one of said database server and said database client (Paragraph 20, Figure 3).

The examiner notes that Ernst teaches "wherein said first end system comprises one of a database server and a database client" as "system 300 in accordance with one embodiment of the invention comprises server computer system 305 on which web server application 310 and selective compression routine 315 execute" (Paragraph 20). The examiner further notes that Ernst teaches "said second end system comprises the other one of said database server and said database client" as "routine 315 is logically positioned between web server application 310 and client computer system 320" (Paragraph 20).

Regarding claims 10 and 20, **Ernst** further teaches a method and computer readable medium comprising:

A) wherein said data comprises software instructions (Paragraph 28).

The examiner notes that **Ernst** teaches "**wherein said data comprises software instructions**" as "In addition, acts in accordance with FIGS. 4, 5, 6, 8, and 9 may be performed by a programmable control device executing instructions organized into a program module (e.g. routine 315)" (Paragraph 28).

Regarding claim 21, Ernst teaches an apparatus comprising:

- A) means for determining <u>in said first end system</u> whether to send said data in a compressed format (Paragraph 21, Figure 4);
- B) means for compressing said data to generate compressed data using a compression approach and means for sending said compressed data to said second end system on said network if it is determined to send said data in said compressed format (Paragraph 21, Figure 4); and
- C) means for sending said data in an uncompressed format to said second end system on said network otherwise (Paragraph 21, Figure 4);

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The examiner notes that Ernst teaches "means for determining in said first end system whether to send said data in a compressed format" as "When routine 315 receives web server 310's response to browser 325's request for data (block 405), it determines whether the data contained therein is eligible for compression (decision block 410)" (Paragraph 21). The examiner further notes that Ernst teaches "means for compressing said data to generate compressed data using a compression approach and means for sending said compressed data to said second end system on said network if it is determined to send said data in said compressed format" as "After compressing the data, routine 315 may update a metadata store it uses to track what data objects its has compressed (block 450) and then transmit the compressed data back to browser 325 (block 455)" (Paragraph 21). The examiner further notes that Ernst teaches "means for sending said data in an uncompressed format to said second end system on said network otherwise" as "If the data is not eligible for compression (the "NO" prong of decision block 410), the data received from the web server 310 during the acts of block 405 is passed or relayed to browser 325 without further processing (block 415)" (Paragraph 21). The examiner further notes that Ernst teaches "wherein said means for determining checks a processing load on each of said first end system and said second end system" as "routine 315 in accordance with one embodiment of the invention begins by determining certain client 320/browser 325 information (block 400). For example, routine 315 may determine the approximate data transfer rate between browser 325 and web server 210 during set-up operations. In addition, routine 315 may ascertain if browser 325 supports decompression utilities" (Paragraph 21) and "a further check is made to determine if the central processor unit executing routine 315 and/or designated to compress data for routine 315 is below a specified utilization (decision block 430). The check of block 430 may be performed to ensure that server 305 (or a functional unit associated with server 305) is not tasked to perform a computationally intensive job (the act of compressing data) if it is already heavily utilized for other tasks" (Paragraph 21). The examiner further notes that Ernst teaches "determines not to send said data in said ... compressed format if the processing load on either end system is determined to

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be more than a third threshold" as "a utilization threshold may be set at specified percentage of the processor's total capacity. In some embodiments, this threshold may be set at the user's discretion anywhere from 0% to 100%. For example 85%. If routine 315's processor's utilization is at or above the specified threshold (the "YES" prong of decision block 430), data received from web server 310 during the acts of block 405 is passed or relayed to browser 325 with further processing (block 415)" (Paragraph 21).

Ernst does not explicitly teach:

- D) wherein said determining checks a processing load on said second end system; and
- E) determines not to send said data in said compressed format if the processing load on <u>said second</u> end system is determined to be more than a third threshold.

Cranstone, however, teaches "wherein said determining checks a processing load on said second end system" as "Computing resource characteristic detect module 34 is configured to obtain information useful to assess generally, the capability of a client device 16 to decode and decompress a multimedia current stream which, as described above, is commonly compressed. As used herein, computing resource characteristics may include the type and clock speed of a central processing unit (CPU), including any other characterizing computing ability" (Paragraph 31) and "determines not to send said data in said compressed format if the processing load on said second end system" as "the video server 12 may determine that no compression should be used in order to provide the best experience to the user of that particular client device 16 in terms of framers per second" (Paragraph 38), "Sufficient computing resources may be unavailable to perform the decoding, decompression and the color-to-grey scale and scaling conversions in a suitably high frame rate. In such case, the server software may perform the color-to-grey scale and size scaling transformations on the server side and send that in either compressed or uncompressed format to the client device 16" (Paragraph 39), and "Video format module 42 selects an uncompressed, 16-level grey-scale video format with a scaled size of approximately 160 x 160 pixels for communication to this client 16" (Paragraph 45).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Cranstone's** would have allowed **Ernst's** to provide a method for allowing servers to not presume significant resources in end-user devices for data transfer and compression, as noted by **Cranstone** (Paragraph 9).

Ernst and Cranstone, do not explicitly teach:

E) the processing load on <u>said second</u> end system is determined to be more than a first threshold.

Tracton, however, teaches "the processing load on <u>said second</u> end system is determined to be more than a first threshold" as "Next, the script inspects the clock speed of the client device 102. The server is attempting to determine whether the client has the raw horsepower to process high-bandwidth content" (Column 6, lines 57-60) and "If 228 of the processor is neither a Pentium Pro, Pentium II, or Pentium, or if 230 the clock speed was less than 300 MHz, or if 232 the client's network application 112 is not a supported web browser" (Column 7, lines 22-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Tracton's** would have allowed **Ernst's** and **Cranstone's** to provide a method for a server to accurately determine the client capabilities (e.g., processor speed, memory configuration, etc.) in order to tailor output of the server to meet those client capabilities, as noted by **Tracton** (Column 3, lines 7-12).

Regarding claim 24, **Ernst** further teaches an apparatus comprising:

- A) wherein said means for determining checks a type of said data (Paragraphs 21 and 23, Figure 4); and
- B) determines not to send said data in said compressed format if said type does not lend to substantial data compression (Paragraphs 21 and 23, Figure 4).

The examiner notes that **Ernst** teaches "wherein said means for determining checks a type of said data" as "By way of example, data less than a specified size, or data already in a compressed format, or of a specified file type...may be designated

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"not eligible". If the data is not eligible for compression (the "NO" prong of decision block 410), the data received from the web server 310 during the acts of block 405 is passed or relayed to browser 325 without further processing (block 415)" (Paragraph 21). The examiner further notes that **Ernst** teaches "determines not to send said data in said compressed format if said type does not lend to substantial data compression" as "By way of example, data less than a specified size, or data already in a compressed format, or of a specified file type...may be designated "not eligible". If the data is not eligible for compression (the "NO" prong of decision block 410), the data received from the web server 310 during the acts of block 405 is passed or relayed to browser 325 without further processing (block 415)" (Paragraph 21).

Regarding claim 25, Ernst further teaches an apparatus comprising:

- A) wherein said means for determining examines a size of said data (Paragraph 21, Figure 4); and
- B) determines not to send said data in said compressed format if said size is small (Paragraph 21, Figure 4).

The examiner notes that **Ernst** teaches "**wherein said means for determining examines a size of said data**" as "By way of example, data less than a specified size, or data already in a compressed format, or of a specified file type...may be designated "not eligible". If the data is not eligible for compression (the "NO" prong of decision block 410), the data received from the web server 310 during the acts of block 405 is passed or relayed to browser 325 without further processing (block 415)" (Paragraph 21). The examiner further notes that **Ernst** teaches "**determines not to send said data in said compressed format if said size is small**" as "By way of example, data less than a specified size, or data already in a compressed format, or of a specified file type...may be designated "not eligible". If the data is not eligible for compression (the "NO" prong of decision block 410), the data received from the web server 310 during the acts of block 405 is passed or relayed to browser 325 without further processing (block 415)" (Paragraph 21).

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Regarding claim 26, **Ernst** further teaches an apparatus comprising:

A) wherein said means for determining further checks a speed of data transfer on said network (Paragraph 21, Figure 4); and

B) determines not to use said compressed format if said speed is high (Paragraph 21, Figure 4).

The examiner notes that Ernst teaches "wherein said means for determining further checks a speed of data transfer on said network" as "based on the determined transmission rate between web server 310 and browser 325 (in accordance with the acts of block 400) and the amount of time it takes to compress the data object, routine 315 can determine if the time it takes to compress the data object provides an acceptable speed-up in transmission (block 440)" (Paragraph 21). The examiner further notes that Ernst teaches "determines not to use said compressed format if said speed is high" as "In one embodiment, if the time saved in transmitting the compressed data does not save more time (at the determined transmission rate between web server 310 and browser 325) than it takes to compress the data (the "NO" prong in decision block 440), the data received from web server 310 during the acts of block 405 is passed or relayed to browser 325 without further processing (block 415)" (Paragraph 21).

Regarding claim 29, Ernst further teaches an apparatus comprising:

- A) wherein said first end system comprises one of a database server and a database client (Paragraph 20, Figure 3); and
- B) said second end system comprises the other one of said database server and said database client (Paragraph 20, Figure 3).

The examiner notes that Ernst teaches "wherein said first end system comprises one of a database server and a database client" as "system 300 in accordance with one embodiment of the invention comprises server computer system 305 on which web server application 310 and selective compression routine 315 execute" (Paragraph 20). The examiner further notes that Ernst teaches "said second end system comprises the other one of said database server and said database

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client" as "routine 315 is logically positioned between web server application 310 and client computer system 320" (Paragraph 20).

- 12. Claims 7, 17, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ernst et al. (U.S. PGPUB 2004/0103215) in view of Cranstone et al. (European Patent WO 02/097584 published on 12/05/2002), and in view of Tracton et al. (U.S. Patent 6,832241) as applied to claims 1, 4-6, 9-11, 14-16, 19-21, 24-26, and 29, and in view of Somekh et al. (U.S. PGPUB 2003/0123466).
- 13. Regarding claims 7 and 17, **Ernst**, **Cranstone**, and **Tracton** do not explicitly teach a method and computer readable medium comprising:
- A) wherein said speed is determined by sending an ICMP echo packet.

Somekh, however, teaches "wherein said speed is determined by sending an ICMP echo packet" as "Optionally, the round trip delay of packets on the network 38 included in the current MoIP connection 30, is measured by transmitting an echo request packet (e.g., an ICMP echo request) from one of the gateways 36 to the other and measuring the time between transmitting the echo request and receiving the response thereto, from the other gateway" (Paragraph 201).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Somekh's** would have allowed **Ernst's**, **Cranstone's**, and **Tracton's** to provide a method to allow for calculating utilization speeds for potential transfers of data.

Regarding claim 27, **Ernst**, **Cranstone**, and **Tracton** do not explicitly teach an apparatus comprising:

A) wherein said means for determining determines said speed by sending an ICMP echo packet.

Somekh, however, teaches "wherein said means for determining determines said speed by sending an ICMP echo packet" as "Optionally, the round trip delay of packets on the network 38 included in the current MoIP connection 30, is measured by transmitting an echo request packet (e.g., an ICMP echo request) from one of the

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gateways 36 to the other and measuring the time between transmitting the echo request and receiving the response thereto, from the other gateway" (Paragraph 201).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Somekh's** would have allowed **Ernst's**, **Cranstone's**, and **Tracton's** to provide a method to allow for calculating utilization speeds for potential transfers of data.

- 14. Claims 8, 18, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ernst et al.** (U.S. PGPUB 2004/0103215) in view of **Cranstone et al.** (European Patent WO 02/097584 published on 12/05/2002), and in view of **Tracton et al.** (U.S. Patent 6,832241) as applied to claims 1, 4-6, 9-11, 14-16, 19-21, 24-26, and 29, and in view of **Gish** (U.S. PGPUB 2005/0144309).
- 15. Regarding claims 8 and 18, **Ernst** further teaches a method and computer readable medium comprising:
- A) wherein said determining further checks a speed of data transfer on said network and determines not to use said compressed format is said speed is high (Paragraph 21).

The examiner notes that Ernst teaches "wherein said determining further checks a speed of data transfer on said network and determines not to use said compressed format is said speed is high" as "In one embodiment, if the time saved in transmitting the compressed data does not save more time (at the determined transmission rate between web server 310 and browser 325) than it takes to compress the data (the "NO" prong in decision block 440), the data received from web server 310 during the acts of block 405 is passed or relayed to browser 325 without further processing (block 415)" (Paragraph 21).

Ernst, **Cranstone**, and **Tracton** do not explicitly teach:

B) wherein said speed is determined by including a first local time stamp in a packet sent to said second end system, and receiving a second time stamp and a third time stamp from said second end system at a time specified by a fourth local time stamp, wherein said second time stamp indicates a time at which said packet is received in said second end system and said third time stamp indicates a time at which said packet

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is sent from said second end system, wherein said speed is determined based on said first local time stamp, said second time stamp, said third time stamp, and said fourth time stamp.

Gish, however, teaches "wherein said speed is determined by including a first local time stamp in a packet sent to said second end system, and receiving a second time stamp and a third time stamp from said second end system at a time specified by a fourth local time stamp, wherein said second time stamp indicates a time at which said packet is received in said second end system and said third time stamp indicates a time at which said packet is sent from said second end system, wherein said speed is determined based on said first local time stamp, said second time stamp, said third time stamp, and said fourth time stamp" as "In one embodiment, the basic timing protocol involves sending messages at regular intervals from a timing client to a timing server and back. Four time-stamps (TS) are appended to this round-trip message. Specifically: TS1 Appended by the client when it sends the message to the server TS2 Appended by the server when it receives the message TS3 Appended by the server when it sends the message back to the client TS4 Appended by the client when it receives the message. These four time-stamps are then used by the timing algorithm, which calculates the round-trip delay. In one embodiment the round-trip delay is computed as: (TS4-TS1)-(TS3-TS2). This corresponds to the time it takes for a message to travel to the timing server and back, minus the time it takes for the server to turn the message around" (Paragraphs 50-51).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Gish's** would have allowed **Ernst's**, **Cranstone's**, and **Tracton's** to provide a method for a server to combat congestions and detect faulty behavior in networks through various calculation techniques, as noted by **Gish** (Paragraph 3).

Regarding claim 28, Ernst further teaches an apparatus comprising:

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A) wherein said means for determining further checks a speed of data transfer on said network and determines not to use said compressed format is said speed is high (Paragraph 21).

The examiner notes that Ernst teaches "wherein said means for determining further checks a speed of data transfer on said network and determines not to use said compressed format is said speed is high" as "In one embodiment, if the time saved in transmitting the compressed data does not save more time (at the determined transmission rate between web server 310 and browser 325) than it takes to compress the data (the "NO" prong in decision block 440), the data received from web server 310 during the acts of block 405 is passed or relayed to browser 325 without further processing (block 415)" (Paragraph 21).

Ernst, Cranstone, and Tracton do not explicitly teach:

B) wherein said means for determining includes a first local time stamp in a packet sent to said second end system, and receives a second time stamp and a third time stamp from said second end system at a time specified by a fourth local time stamp, wherein said second time stamp indicates a time at which said packet is received in said second end system and said third time stamp indicates a time at which said packet is send from said second end system, wherein said speed is determined based on said first local time stamp, said second time stamp, said third time stamp, and said fourth time stamp.

Gish, however, teaches "wherein said means for determining includes a first local time stamp in a packet sent to said second end system, and receives a second time stamp and a third time stamp from said second end system at a time specified by a fourth local time stamp, wherein said second time stamp indicates a time at which said packet is received in said second end system and said third time stamp indicates a time at which said packet is send from said second end system, wherein said speed is determined based on said first local time stamp, said second time stamp, said third time stamp, and said fourth time stamp" as "In one embodiment, the basic timing protocol involves sending messages at regular intervals from a timing client to a timing server and back. Four time-stamps (TS) are appended to this round-trip message. Specifically: TS1 Appended by the client when it

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sends the message to the server TS2 Appended by the server when it receives the message TS3 Appended by the server when it sends the message back to the client TS4 Appended by the client when it receives the message. These four time-stamps are then used by the timing algorithm, which calculates the round-trip delay. In one embodiment the round-trip delay is computed as: (TS4-TS1)-(TS3-TS2). This corresponds to the time it takes for a message to travel to the timing server and back, minus the time it takes for the server to turn the message around" (Paragraphs 50-51).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Gish's** would have allowed **Ernst's**, **Cranstone's**, and **Tracton's** to provide a method for a server to combat congestions and detect faulty behavior in networks through various calculation techniques, as noted by **Gish** (Paragraph 3).

- 16. Claims 30-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ernst et al.** (U.S. PGPUB 2004/0103215) in view of **Cranstone et al.** (European Patent WO 02/097584 published on 12/05/2002), and in view of **Tracton et al.** (U.S. Patent 6,832241) as applied to claims 1, 4-6, 9-11, 14-16, 19-21, 24-26, and 29, and in view of **Kiel et al.** (U.S. Patent 5,276,898).
- 17. Regarding claims 30 and 32, **Ernst**, **Cranstone**, and **Tracton** do not explicitly teach a method and computer readable medium comprising:
- A) wherein said determining checks said processing load on said second end system periodically including at a first time instance and then at a second time instance; and B) determines not to send data in said compressed format between said first time instance and said second time instance if the processing load at said first time instance is more than said first threshold.

Kiel, however, teaches "wherein said determining checks said processing load on said second end system periodically including at a first time instance and then at a second time instance" as "A processor work load is periodically identified for the processor. A predetermined stored threshold value is identified and compared with the identified processor work load" (Abstract) and "Otherwise when it is determined that compression is not currently being done at block 604, then a processor utilization

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starting threshold value P_{START} is identified for the particular line speed in the stored look up table as indicated by a block 616. Next the identified starting threshold value P_{START} is compared with a last calculated processor utilization value P_U and it is determined if data compression was stopped as represented by a decision block 618. When it is determined that the last calculated processor utilization value P_U is less than or equal to the threshold starting value P_{START} and it is determined that data compression was previously stopped at block 610, then a start compression message is built in an unnumbered information frame UIF as indicated by a block 620. Then an internal flag is set indicative of an outstanding UIF at block 612 and the frame is passed to be transmitted at block 614. Otherwise when it is determined that the last calculated processor utilization value P_U is greater than the threshold starting value P_{START} or it is determined that data compression was not previously stopped at block 610, then no further processing is performed within the module" (Column 7, lines 59-67-Column 8, lines 1-12) and "determines not to send data in said compressed format between said first time instance and said second time instance if the processing load at said first time instance is more than said first threshold" as "Otherwise when it is determined that compression is not currently being done at block 604, then a processor utilization starting threshold value P_{START} is identified for the particular line speed in the stored look up table as indicated by a block 616. Next the identified starting threshold value P_{START} is compared with a last calculated processor utilization value $P_{\underline{U}}$ and it is determined if data compression was stopped as represented by a decision block 618. When it is determined that the last calculated processor utilization value P_U is less than or equal to the threshold starting value P_{START} and it is determined that data compression was previously stopped at block 610, then a start compression message is built in an unnumbered information frame UIF as indicated by a block 620. Then an internal flag is set indicative of an outstanding UIF at block 612 and the frame is passed to be transmitted at block 614. Otherwise when it is determined that the last calculated processor utilization value P_U is greater than the threshold starting value P_{START} or it is determined that data compression was not previously stopped at block 610, then no

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further processing is performed within the module" (Column 7, lines 59-67-Column 8, lines 1-12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Kiel's** would have allowed **Ernst's**, **Cranstone's**, and **Tracton's** to provide a method to dynamically control the use of data compression in order to improve system performance, as noted by **Kiel** (Column 2, lines 25-28).

Regarding claims 31 and 33, **Ernst** further teaches a method and compute readable medium comprising:

- A) wherein said determining checks a processing load on said first end system (Abstract, Paragraph 21, Figure 4); and
- B) determines to said send said data in said compressed format if the processing load on said first second end system is not more than said first threshold (Paragraph 21, Figure 4).

The examiner notes that Ernst teaches "wherein said determining checks a processing load on said first end system" as "characteristics of the server computer system such as its processor utilization, for example, may be used to determine if data compression is beneficial" (Abstract) and "a further check is made to determine if the central processor unit executing routine 315 and/or designated to compress data for routine 315 is below a specified utilization (decision block 430). The check of block 430 may be performed to ensure that server 305 (or a functional unit associated with server 305) is not tasked to perform a computationally intensive job (the act of compressing data) if it is already heavily utilized for other tasks" (Paragraph 21). The examiner further notes that Ernst teaches "determines to said send said data in said compressed format if the processing load on said first second end system is not more than said first threshold" as "a utilization threshold may be set at a specified percentage of the processor's total capacity. In some embodiments, this threshold may be set at the user's discretion anywhere from 0% to 100%. For example 85%. If routine 315's processor's utilization is at or above the specified threshold (the "YES" prong of

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decision block 430), data received from web server 310 during the acts of block 405 is passed or relayed to browser 325 without further processing (block 415). If routine 315's processor's utilization is below the specified threshold (the "NO" prong of decision block 430), routine 315 determines if it has previously compressed the data (decision block 435). (See discussion below regarding FIGS. 7 and 8.) If routine 315 has previously compressed the data and that compressed data is currently not available (the "YES" prong of decision block 435), it then determines if compressing the data would provide a transmission benefit (block 440). (See discussion below regarding FIG. 9.) For example, based on the determined transmission rate between web server 310 and browser 325 (in accordance with the acts of block 400) and the amount of time it takes to compress the data object, routine 315 can determine if the time it will take to compress the data object provides an acceptable speed-up in transmission (decision block 440). In one embodiment, if the time saved in transmitting the compressed data does not save more time (at the determined transmission rate between web server 310 and browser 325) than it takes to compress the data (the "NO" prong of decision block 440), the data received from web server 310 during the acts of block 405 is passed or relayed to browser 325 without further processing (block 415). In another embodiment, if the time saved in transmitting the compressed data does not save at least a specified amount of time, above the time it takes to compress the data (e.g., 110%), the data received from web server 310 during the acts of block 405 is passed or relayed to browser 325 without further processing (block 415). If routine 315 determines that the time saved in transmitting the compressed data is acceptable/beneficial (the "YES" prong of decision block 440) or if the data received from web server 310 has not yet been compressed (the "NO" prong of decision block 435), routine 315 compresses the data (block 445)" (Paragraph 21).

Ernst and **Cranstone** do not explicitly teach:

B) determines to send said data in said compressed format if the processing load on said second end system is not more than a second threshold.

Tracton, however, teaches "determines to send said data in said compressed format if the processing load on said second end system is not more

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than a second threshold" as "If 228 the processor is neither a Pentium Pro.RTM., Pentium II:RTM., or Pentium.RTM., or if 230 the clock speed was less than 300 MHz, or if 232 the client's network application 112 is not a supported web browser, then the client will be directed towards the low-bandwidth 126 content referenced in the LOWSPEED variable 210. The LOWSPEED page is intended to allow the server to prepare low-complexity content that is acceptable to a common-denominator of incoming clients (e.g., assuming everyone has an Intel 80486 or equivalent processor and a network link speed of at least 28.8K)" (Column 7, lines 22-32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Tracton's** would have allowed **Ernst's** and **Cranstone's** to provide a method for a server to accurately determine the client capabilities (e.g., processor speed, memory configuration, etc.) in order to tailor output of the server to meet those client capabilities, as noted by **Tracton** (Column 3, lines 7-12).

Regarding claim 34, **Ernst**, **Cranstone**, and **Tracton** do not explicitly teach a computer readable medium comprising:

- A) wherein said means for determining checks said processing load on said second end system periodically including at a first time instance and then at a second time instance; and
- B) determines not to send data in said compressed format between said first time instance and said second time instance if the processing load at said first time instance is more than said first threshold.

Kiel, however, teaches "wherein said means for determining checks said processing load on said second end system periodically including at a first time instance and then at a second time instance" as "A processor work load is periodically identified for the processor. A predetermined stored threshold value is identified and compared with the identified processor work load" (Abstract) and "Otherwise when it is determined that compression is not currently being done at block 604, then a processor utilization starting threshold value P_{START} is identified for the

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particular line speed in the stored look up table as indicated by a block 616. Next the identified starting threshold value P_{START} is compared with a last calculated processor utilization value P_U and it is determined if data compression was stopped as represented by a decision block 618. When it is determined that the last calculated processor utilization value P_U is less than or equal to the threshold starting value P_{START} and it is determined that data compression was previously stopped at block 610, then a start compression message is built in an unnumbered information frame UIF as indicated by a block 620. Then an internal flag is set indicative of an outstanding UIF at block 612 and the frame is passed to be transmitted at block 614. Otherwise when it is determined that the last calculated processor utilization value Pu is greater than the threshold starting value P_{START} or it is determined that data compression was not previously stopped at block 610, then no further processing is performed within the module" (Column 7, lines 59-67-Column 8, lines 1-12) and "determines not to send data in said compressed format between said first time instance and said second time instance if the processing load at said first time instance is more than said first threshold" as "Otherwise when it is determined that compression is not currently being done at block 604, then a processor utilization starting threshold value P_{START} is identified for the particular line speed in the stored look up table as indicated by a block 616. Next the identified starting threshold value P_{START} is compared with a last calculated processor utilization value $P_{\underline{U}}$ and it is determined if data compression was stopped as represented by a decision block 618. When it is determined that the last calculated processor utilization value P_U is less than or equal to the threshold starting value P_{START} and it is determined that data compression was previously stopped at block 610, then a start compression message is built in an unnumbered information frame UIF as indicated by a block 620. Then an internal flag is set indicative of an outstanding UIF at block 612 and the frame is passed to be transmitted at block 614. Otherwise when it is determined that the last calculated processor utilization value P_U is greater than the threshold starting value P_{START} or it is determined that data compression was not previously stopped at block 610, then no further processing is performed within the module" (Column 7, lines 59-67-Column 8, lines 1-12).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Kiel's** would have allowed **Ernst's**, **Cranstone's**, and **Tracton's** to provide a method to dynamically control the use of data compression in order to improve system performance, as noted by **Kiel** (Column 2, lines 25-28).

Regarding claim 35, **Ernst** further teaches a compute readable medium comprising:

- A) wherein said means for determining checks a processing load on said first end system (Abstract, Paragraph 21, Figure 4); and
- B) determines to said send said data in said compressed format if the processing load on said first second end system is not more than said first threshold (Paragraph 21, Figure 4).

The examiner notes that Ernst teaches "wherein said means for determining" checks a processing load on said first end system" as "characteristics of the server computer system such as its processor utilization, for example, may be used to determine if data compression is beneficial" (Abstract) and "a further check is made to determine if the central processor unit executing routine 315 and/or designated to compress data for routine 315 is below a specified utilization (decision block 430). The check of block 430 may be performed to ensure that server 305 (or a functional unit associated with server 305) is not tasked to perform a computationally intensive job (the act of compressing data) if it is already heavily utilized for other tasks" (Paragraph 21). The examiner further notes that Ernst teaches "determines to said send said data in said compressed format if the processing load on said first second end system is not more than said first threshold" as "a utilization threshold may be set at a specified percentage of the processor's total capacity. In some embodiments, this threshold may be set at the user's discretion anywhere from 0% to 100%. For example 85%. If routine 315's processor's utilization is at or above the specified threshold (the "YES" prong of decision block 430), data received from web server 310 during the acts of block 405 is passed or relayed to browser 325 without further processing (block 415).

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If routine 315's processor's utilization is below the specified threshold (the "NO" prong of decision block 430), routine 315 determines if it has previously compressed the data (decision block 435). (See discussion below regarding FIGS. 7 and 8.) If routine 315 has previously compressed the data and that compressed data is currently not available (the "YES" prong of decision block 435), it then determines if compressing the data would provide a transmission benefit (block 440). (See discussion below regarding FIG. 9.) For example, based on the determined transmission rate between web server 310 and browser 325 (in accordance with the acts of block 400) and the amount of time it takes to compress the data object, routine 315 can determine if the time it will take to compress the data object provides an acceptable speed-up in transmission (decision block 440). In one embodiment, if the time saved in transmitting the compressed data does not save more time (at the determined transmission rate between web server 310 and browser 325) than it takes to compress the data (the "NO" prong of decision block 440), the data received from web server 310 during the acts of block 405 is passed or relayed to browser 325 without further processing (block 415). In another embodiment, if the time saved in transmitting the compressed data does not save at least a specified amount of time, above the time it takes to compress the data (e.g., 110%), the data received from web server 310 during the acts of block 405 is passed or relayed to browser 325 without further processing (block 415). If routine 315 determines that the time saved in transmitting the compressed data is acceptable/beneficial (the "YES" prong of decision block 440) or if the data received from web server 310 has not yet been compressed (the "NO" prong of decision block 435), routine 315 compresses the data (block 445)" (Paragraph 21).

Ernst and **Cranstone** do not explicitly teach:

B) determines to send said data in said compressed format if the processing load on said second end system is not more than a second threshold.

Tracton, however, teaches "determines to send said data in said compressed format if the processing load on said second end system is not more than a second threshold" as "If 228 the processor is neither a Pentium Pro.RTM., Pentium II.RTM., or Pentium.RTM., or if 230 the clock speed was less than 300 MHz, or

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if 232 the client's network application 112 is not a supported web browser, then the client will be directed towards the low-bandwidth 126 content referenced in the LOWSPEED variable 210. The LOWSPEED page is intended to allow the server to prepare low-complexity content that is acceptable to a common-denominator of incoming clients (e.g., assuming everyone has an Intel 80486 or equivalent processor and a network link speed of at least 28.8K)" (Column 7, lines 22-32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Tracton's** would have allowed **Ernst's** and **Cranstone's** to provide a method for a server to accurately determine the client capabilities (e.g., processor speed, memory configuration, etc.) in order to tailor output of the server to meet those client capabilities, as noted by **Tracton** (Column 3, lines 7-12).

Response to Arguments

18. Applicant's arguments with respect to claims 1, 4-11, 14-21, and 24-35 filed on 02/27/2007 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

- 19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
- U.S. PGPUB 2004/0205249 issued to **Berry** on 14 October 2004. The subject matter disclosed therein is pertinent to that of claims 1, 4-11, 14-21, and 24-35 (e.g., determining whether to compress data to a requesting client).
- U.S. PGPUB 2005/0210151 issued to **Abdo et al.** on 22 September 2005. The subject matter disclosed therein is pertinent to that of claims 1, 4-11; 14-21, and 24-35 (e.g., determining whether to compress data to a requesting client).
- U.S. PGPUB 2005/0268068 issued to **Ignatius et al.** on 01 December 2005. The subject matter disclosed therein is pertinent to that of claims 1, 4-11, 14-21, and 24-35 (e.g., determining whether to compress data to a requesting client).

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U.S. PGPUB 2002/0184224 issued to **Haff et al.** on 05 December 2002. The subject matter disclosed therein is pertinent to that of claims 1, 4-11, 14-21, and 24-35 (e.g., determining whether to compress data to a requesting client).

- U.S. Patent 7,043,524 issued to **Shah et al.** on 09 May 2006. The subject matter disclosed therein is pertinent to that of claims 30-35 (e.g., periodic determination of cpu utilization).
- U.S. Patent 7,024,460 issued to **Koopmas et al.** on 04 April 2006. The subject matter disclosed therein is pertinent to that of claims 1, 4-11, 14-21, and 24-35 (e.g., determining whether to compress data to a requesting client).
- U.S. Patent 6,535,238 issued to **Kressin** on 18 May 2003. The subject matter disclosed therein is pertinent to that of claims 1, 4-11, 14-21, and 24-35 (e.g., determining whether to compress data to a requesting client).
- U.S. PGPUB 2005/0188112 issued to **Desai et al.** on 25 August 2005. The subject matter disclosed therein is pertinent to that of claims 1, 4-11, 14-21, and 24-35 (e.g., determining whether to compress data to a requesting client).

Contact Information

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mahesh Dwivedi whose telephone number is (571) 272-2731. The examiner can normally be reached on Monday to Friday 8:20 am – 4:40 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo can be reached (571) 272-3642. The fax number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Mahesh Dwivedi Patent Examiner Art Unit 2168

March 06, 2007

Leslie Wong L

Primary Examiner

TIM VO SUPERVISORY PATENT EXAMINER TECHNOLOGY CENTER 2100